

Appl. No. 10/733,984
Examiner: MONDT, JOHANNES P, Art Unit 2826
In response to the Office Action dated March 16, 2006

Date: June 10, 2006
Attorney Docket No. 10113311

REMARKS

Responsive to the Office Action mailed on March 16, 2006 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 23-27 are pending. Claim 23 stands rejected under 35 U.S.C. 102(e) as being anticipated by Tu et al (US 6,100,138, hereinafter "Tu"). Claims 25-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tu in view of Hartner et al (US 6,043,529, hereinafter "Hartner"). Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 27 is withdrawn from consideration.

In this paper, claim 23 has been amended to recite, *inter alia*, a passivation layer serving as a diffusion barrier and a second insulating layer comprising doped materials. Support for the added limitations can be found on page 8, lines 4-9 of the application. Applicant submits that no new matter has been added.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Allowable Subject Matter

Applicant thanks the Examiner for his indication in the Office Action that claim 24 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

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Rejections Under 35 U.S.C. 102(e)

Claim 23 stands rejected under 35 U.S.C. 102 (e) as being anticipated by Tu. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

To anticipate a claim, a reference must teach every element of the claim. In this regard, the Federal Circuit has held:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Amended claim 23 recites a structure of bit line contact hole, comprising:

... a passivation layer **serving as a diffusion barrier**, disposed on the inner landing pad, the transistor, and the substrate;

a second insulating layer **comprising doped materials**, disposed on the passivation layer ...

In the embodiment of the invention described on page 8, lines 1-9 of the application, the insulating layer 124 formed on the passivation layer 122 comprises a stacked BPSG layer and TEOS layer, and the passivation layer 122 underlying the insulating layer 124 is used as a diffusion barrier to prevent BPSG from diffusing into the transistor 102 or the substrate 100.

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Applicant respectively submits that Tu does not teach or suggest an insulating layer comprising doped materials overlying a passivation layer. To the contrary, according to Fig. 3A and column 4, lines 55-64 of Tu, the thin nitride barrier layer 135a is formed on the inter-poly dielectric layer 130 to serve as an etching stopper while performing the damascene processes, and the thick nitride layer 160 is formed on the thin nitride barrier layer 135a and inter-poly dielectric layer 130 to serve as a capping layer for protecting the conductive layer.

Neither the thick nitride layer 160 nor the thin nitride barrier layer 135a identified by the Examiner as the alleged second insulating layer of claim 23 contain dopant. Furthermore, given that neither the thick nitride layer 160 nor the thin nitride barrier layer 135a contain dopant, Applicant submits that neither the thin nitride barrier layer 135a nor the inter-poly dielectric layer 130 teach a passivation layer serving as a diffusion barrier, as recited in claim 23.

Applicant therefore submits that Tu fails to teach or suggest 1) a second insulating layer comprising doped materials and 2) a passivation layer underlying the second insulating layer to serve as a diffusion barrier, as recited in claim 23.

For at least the reasons described above, it is Applicant's belief that Tu fails to teach or suggest all the limitations of claim 23. Applicant therefore respectfully requests that the rejection of claim 23 be withdrawn and the claim passed to issue. Insofar as claims 24-26 depend from claim 23 either directly or indirectly, and therefore incorporate all of the limitations of claim 23, it is Applicant's belief that these claims are also in condition for allowance.

Rejection under 35 U.S.C. 103(a)

Claims 25-26 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over Tu in view of Hartner. As noted above, it is Applicant's belief that claims 25-26 are allowable by virtue of their dependency from claim 23. For this reason, the Examiner's arguments in connection with these claims are considered moot and will not be addressed here.

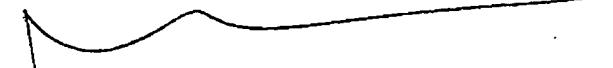
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Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



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